

get the facts

Headaches and Complementary Health Approaches



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Headaches are one of the most common forms of pain. For some people a headache may be a minor irritation once or twice a year, while others can suffer disabling pain on an almost daily basis. Researchers are studying a number of complementary health approaches for different types of headaches. This fact sheet provides basic information on headaches, summarizes research on the effectiveness and safety of selected complementary health approaches for headaches, and suggests sources for additional information. If you are considering a complementary health approach for headaches, this information can help you talk to your health care provider about it.

Key Points

- Some complementary health approaches, such as certain dietary supplements, relaxation training, biofeedback, and acupuncture, are associated with fewer or less painful headaches.
- Do not replace conventional medical treatments for headaches with products or practices that are unproven.
- Tell all your health care providers about any complementary health approaches you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care.

About Headaches

Headaches occur when pain-sensitive nerve endings around the scalp, in the blood vessels that surround the skull, in the lining around the brain, and in other areas around the head send impulses to the part of the brain that interprets pain signals from the rest of the body. Some headaches are related to tender spots in head, neck, and shoulder muscles.

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More than 45 million Americans have headaches severe enough to require the help of a health care professional. The toll on the economy from migraines alone is immense—direct costs (from prescription drugs, outpatient expenses, and emergency room and inpatient care) are estimated at \$11 billion and indirect costs (such as missed work days) may exceed \$12 billion annually. Migraine headaches also cause an annual loss of 157 million workdays.

Primary Headaches

Primary headaches are those that are not a symptom of another medical condition. There are three major types of primary headaches.

- **Tension-type headaches** are the most common kind of primary headache, affecting about 38 percent of American adults annually. A tension-type headache usually affects both sides of the head and is of moderate severity. People describe them as feeling like a band is tightening around their head. A tension-type headache may be triggered by stress, anxiety, depression, or too little sleep. Episodic tension-type headaches can last from 30 minutes to several days. Chronic tension-type headaches usually occur more than 15 days each month (not always consecutive) for about 3 months. The pain of a chronic tension-type headache may be more severe than an episodic one.
- **Migraines** affect about 12 percent of the U.S. population and are more common in women than men (although childhood migraines are more common among boys). Symptoms of migraine headaches typically include throbbing or pulsing pain on one side of the head, nausea, vomiting, and sensitivity to light and sound. Migraines are generally of moderate to severe pain. If a migraine occurs more than 15 days each month for about 3 months, it's considered chronic. The two most common types of migraine are
 - Migraine with aura (visual disturbances or other symptoms such as trouble speaking, numbness, muscle weakness on one side of the body, confusion, or a tingling sensation in the hands or face that appears before the actual headache and usually lasts less than an hour). This affects about a third of people with migraines
 - Migraine without aura. This type of headache can often be confused with a tension-type headache.

Many people who have migraines report that their headaches are triggered by certain conditions or substances such as:

- Environment (weather changes, exposure to bright light, high altitude, smoke, certain odors, and prolonged loud noise)
- Diet (chocolate, garlic, pickled products, processed meats and fish, aged cheese, alcohol—especially wine, or caffeine withdrawal)
- Other factors (exertion, too much sleep, fatigue or exhaustion, irregular motion such as amusement rides or boats, stress, or hormonal changes).

- **Trigeminal autonomic cephalalgias (TACs)** are identified by severe pain in or around one eye and other symptoms such as eye redness and tears, drooping eyelid, and runny nose. The most common TAC is called a cluster headache, because these headaches occur in clusters over a period of weeks or months. Attacks last for about 60 to 90 minutes and may occur at the same time each day or night for days or weeks. People who have cluster headaches say the pain is excruciating and describe it like a “hot, burning poker in the eye.” Cluster headaches are much less common than migraines, affecting about 0.3 percent of the general population.

Secondary Headaches

Secondary headaches are the result of another health disorder and may be signals to seek medical care. Some of the more serious causes of secondary headaches include brain tumor, blood vessel problem (e.g., stroke), head injury, inflammation resulting from infection (such as meningitis and encephalitis), or seizure.

These symptoms require prompt medical attention:

- Sudden onset of a severe headache
- Severe headache accompanied by fever, nausea, vomiting, or a stiff neck that is not related to another illness
- Headache accompanied by confusion, double vision, weakness or loss of sensation in part of the body, or loss of consciousness
- Headache that worsens or changes in pattern over time
- Recurring headache in children
- Headache following a head injury
- Headache associated with convulsions
- Headache associated with shortness of breath
- Two or more headaches per week
- Persistent headaches in someone who previously has not had headaches (particularly in someone older than 50)
- New headaches in someone with a history of cancer or HIV/AIDS.

Complementary Health Approaches for Headaches

Many people take over-the-counter pain relievers or prescription pain medications to relieve their headaches. Those who have frequent and severe migraine headaches may take some form of prescription medication regularly as a preventive measure. Some people may try to reduce their discomfort by adopting lifestyle or dietary changes. In addition, researchers are studying some complementary health approaches for headache relief. These include:

- Mind and body interventions such as relaxation training, biofeedback (the use of simple electronic devices to teach people how to consciously regulate bodily functions, like breathing, heart rate, and blood pressure), acupuncture, tai chi, and cognitive-behavioral therapy
- Massage
- Spinal manipulation
- Dietary supplements.

What the Science Says About Complementary Health Approaches and Headaches

Mind and Body Practices

- **Relaxation training.** One review article noted that relaxation training significantly reduced headache activity compared to other forms of therapy. Relaxation techniques are generally considered safe for healthy people. There have been rare reports that certain relaxation techniques might cause or worsen symptoms in people with epilepsy or certain mental illnesses, or with a history of abuse or trauma. People with heart disease should talk to their doctor before doing progressive muscle relaxation.
- **Biofeedback.** The same article reported that adding biofeedback to a combination of an antidepressant and high blood pressure medication was more effective for tension-type headaches than medication alone. Results from one study indicated that biofeedback provided no additional benefit over relaxation therapy in reducing headache frequency and severity.
- **Acupuncture.**
 - In a review of two large trials in people with tension-type headaches, researchers found that adding acupuncture to the use of pain relievers was more effective than using pain relievers alone.
 - A review that analyzed results from two large and three small trials comparing true acupuncture with sham acupuncture (in which needles were either inserted at incorrect points or did not penetrate the skin) demonstrated a slightly better effect with true acupuncture for tension-type headaches.
 - Results of another review article determined that adding acupuncture to acute or routine care may be beneficial in reducing migraine frequency and intensity.
 - Acupuncture is considered safe when performed by a qualified and competent practitioner using sterile needles. Few complications have been reported. Serious adverse events related to acupuncture are rare, but include infections and punctured organs.
- **Tai chi.** Results from a small clinical trial suggested that a 15-week program of tai chi was effective in reducing the impact of tension-type headaches when compared to a wait-list control group. Tai chi is a relatively safe practice; however, some health care providers may advise their patients to modify or avoid certain tai chi postures due to acute back pain, knee problems, bone fractures, sprains, and osteoporosis.
- **Cognitive-Behavioral therapy.** It has also been suggested that cognitive-behavioral therapy may offer additional relief when combined with medication used for preventing migraines.

Massage

Only a few studies have rigorously examined the role of massage for headaches.

- A 2008 pilot study involving 16 participants suggested that massage may be beneficial in reducing the frequency of tension type headaches as well as the intensity and duration of pain.
- In another small study, researchers observed that a specific type of massage called craniosacral therapy, which involves light touch and manipulation of the skull and spine to release restrictions in tissues, was more effective than doing nothing to relieve pain from a tension-type headache.
- Researchers are also investigating whether massage may help prevent migraines. In a 2006 study, researchers randomly assigned 24 people with migraines to receive six 45-minute massages that focused on the muscles of the back, shoulders, head, and neck while 24 people without migraines acted as a control group. Although there was no change in the average intensity of migraines experienced, the researchers observed a significant reduction in migraine frequency among those who received massages.

Spinal Manipulation

Literature reviews suggest that spinal manipulation may offer some benefit for tension-type headaches and that it also may prevent migraines as well as the medication amitriptyline. Side effects from spinal manipulation can include temporary headaches, tiredness, or discomfort in the parts of the body that were addressed. Although there have been rare reports of serious complications such as stroke, a large 2009 study did not find a relationship between spinal manipulation and vertebrobasilar artery stroke, which involves the arteries that supply blood to the back of the brain.¹ Safety remains an important part of ongoing research.

Dietary Supplements

Researchers are studying dietary supplements to see whether they may prevent, relieve, or reduce the number of headaches people experience.

- Some research suggests that the supplements **riboflavin** and **coenzyme Q10** may be helpful for headaches. Studies using **magnesium** to prevent migraines were inconclusive. Riboflavin and coenzyme Q10 are generally well tolerated, but magnesium supplements may cause diarrhea.

¹ A 2009 study that drew on 9 years of hospitalization records for the population of Ontario, Canada, analyzed 818 cases of vertebrobasilar artery (VBA) stroke (involving the arteries that supply blood to the back of the brain). The study found an association between visits to a health care practitioner and subsequent VBA stroke, but there was no evidence that visiting a chiropractor put people at greater risk than visiting a primary care physician. The researchers attributed the association between health care visits and VBA stroke to the likelihood that people with VBA dissection (torn arteries) seek care for related headache and neck pain before their stroke. A 2007 study of 19,722 chiropractic patients in the United Kingdom concluded that minor side effects (such as temporary soreness) after cervical spine manipulation were relatively common, but that the risk of a serious adverse event was “low to very low” immediately or up to 7 days after manipulation.

- The herbs **feverfew** (*Tanacetum parthenium*) and **butterbur** (*Petasites hybridus*) have been used historically for headache relief. Study results have indicated that feverfew and butterbur may help reduce migraine frequency. In clinical trials, use of feverfew was associated with mild side effects such as open sores in the mouth and upset stomach. Butterbur is generally well tolerated but may cause mild gastrointestinal upset. Some butterbur products contain potentially harmful chemicals called pyrrolizidine alkaloids (PAs). If seeking a butterbur product, look for one labeled or certified as PA-free.

Riboflavin supplements, feverfew, and butterbur are not recommended for pregnant women.

NCCAM Research

NCCAM-supported research on headaches includes the following:

- **Craniosacral therapy** for preventing migraine headaches and to determine if it will partner well with conventional care
- **Spinal manipulation** for relieving headaches and neck pain and to determine the number of sessions that are needed to sustain its benefits
- To see if actual **acupuncture** is more effective than a simulated (sham) acupuncture or usual care in reducing the frequency and severity of chronic daily headaches
- Assessing the effectiveness of **therapeutic massage** in relieving tension-type headaches.

If You Are Considering a Complementary Health Approach for Headaches

- Do not replace proven conventional medical treatments for headaches with unproven products or practices.
- Talk to your health care providers if you are pregnant or nursing and thinking of using a dietary supplement.
- Be aware that some dietary supplements may interact with conventional medical treatments.
- If you are considering a practitioner-provided complementary health practice such as biofeedback or acupuncture, ask a trusted source (such as your health care provider or nearby hospital) to recommend a practitioner. Find out about the training and experience of any complementary health practitioner you are considering. To learn more, see the NCCAM fact sheet *Selecting a Complementary and Alternative Medicine Practitioner* at nccam.nih.gov/health/decisions/practitioner.htm.
- Tell all your health care providers about any complementary health approaches you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care. For tips about talking with your health care providers about complementary health approaches, see NCCAM's Time to Talk campaign at nccam.nih.gov/timetotalk.

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For More Information

NCCAM Clearinghouse

The NCCAM Clearinghouse provides information on NCCAM and complementary health approaches, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

Toll-free in the U.S.: 1-888-644-6226

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National Institute of Neurological Disorders and Stroke

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Web site: www.ninds.nih.gov

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